

**WHAT IS CLAIMED IS:**

1. A method of communicating a desired bit sequence over a wireless communication link, comprising:

including the desired bit sequence in each of a plurality of transmissions over the wireless communication link;

producing in response to each of the plurality of transmissions a received bit sequence corresponding to the desired bit sequence;

obtaining information indicative of communication quality associated with each of the plurality of transmissions; and

making a determination of the desired bit sequence based on the received bit sequences and the communication quality information.

2. The method of Claim 1, wherein said obtaining step includes estimating signal-to-noise ratios respectively associated with the plurality of transmissions.

3. The method of Claim 1, including transmitting the plurality of transmissions on respectively different transmission frequencies.

4. The method of Claim 1, wherein the wireless communication link is a Bluetooth link.

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5. The method of Claim 1, wherein said producing step includes decoding each of a plurality of packets which are respectively included in the plurality of transmissions and in each of which is included the desired bit sequence.

6. The method of Claim 1, wherein said making step includes providing in response to the received bit sequences and the communication quality information a plurality of predetermined probabilities that the respective received bit sequences correspond to a predetermined bit sequence that could possibly be the desired bit sequence.

7. The method of Claim 6, wherein said making step includes multiplying the predetermined probabilities together to produce a product.

8. The method of Claim 7, wherein said making step includes performing said probability providing step and said multiplying step for a plurality of predetermined bit sequences that could possibly be the desired bit sequence in order to produce a plurality of products respectively corresponding to the plurality of predetermined bit sequences.

9. The method of Claim 8, wherein said making step includes making a determination that the predetermined bit sequence corresponding to the largest of the products is the desired bit sequence.

10. The method of Claim 1, wherein said obtaining step includes obtaining a plurality of correlation values respectively associated with the plurality of transmissions.

11. The method of Claim 10, wherein said making step includes making a determination that the received bit sequence corresponding to the largest of the correlation values is the desired bit sequence.

12. The method of Claim 10, wherein said making step includes combining the received bit sequences with the corresponding correlation values.

13. The method of Claim 12, wherein said combining step includes multiplying each of the received bit sequences by one of the corresponding correlation value and the square of the corresponding correlation value to produce a plurality of multiplication results.

14. The method of Claim 13, wherein said combining step includes summing the multiplication results together to produce a summation result, said making step including decoding the summation result and making a determination that the decoded summation result is the desired bit sequence.

15. The method of Claim 1, wherein the desired bit sequence and the received bit sequences each include only a single bit.

16. A wireless communication apparatus, comprising:

a first input for receiving a plurality of received bit sequences respectively produced in response to a plurality of transmissions received via a wireless communication link, each of said received bit sequences corresponding to a desired bit sequence included in each of said plurality of transmissions;

a second input for receiving information indicative of communication quality associated with each of the plurality of transmissions; and

a determiner coupled to said inputs for making a determination of the desired bit sequence based on the received bit sequences and the communication quality information.

17. The apparatus of Claim 16, provided as a Bluetooth device.

18. The apparatus of Claim 16, wherein each of said plurality of transmissions includes a packet having therein the desired bit sequence, and including a decoder coupled to said first input for receiving said packets via the wireless communication link and for decoding said packets to produce the respective bit sequences.

19. The apparatus of Claim 16, wherein said determiner is operable for providing in response to the received bit sequences and the communication quality information a plurality of predetermined probabilities that the respective bit sequences correspond to a predetermined bit sequence that could possibly be the desired bit sequence.

20. The apparatus of Claim 19, wherein said determiner is operable for multiplying the predetermined probabilities together to produce a product.

21. The apparatus of Claim 20, wherein said determiner is operable to provide, for each of a plurality of predetermined bit sequences that could possibly be the desired bit sequence, a plurality of predetermined probabilities that the respective

received bit sequences correspond to the predetermined bit sequence, said determiner further operable to multiply together the plurality of predetermined probabilities associated with each of said predetermined bit sequences in order to produce a plurality of products respectively corresponding to the plurality of predetermined bit sequences.

22. The apparatus of Claim 21, wherein said determiner is operable for making a determination that the predetermined bit sequence corresponding to the largest of the products is the desired bit sequence.

23. The apparatus of Claim 16, including a correlator coupled to said second input for producing a plurality of correlation values respectively associated with said plurality of transmissions and providing the correlation values to said second input.

24. The apparatus of Claim 23, wherein said determiner is operable for making a determination that the received bit sequence corresponding to the largest of the correlation values is the desired bit sequence.

25. The apparatus of Claim 23, wherein said determiner includes a combiner coupled to said first and second inputs for combining the received bit sequences with the corresponding correlation values.

26. The apparatus of Claim 25, wherein said combiner is operable for multiplying each of the received bit sequences by one of the corresponding correlation value and the square of the corresponding correlation value to produce a plurality of multiplication results.

27. The apparatus of Claim 26, wherein said combiner is operable for summing the multiplication results together to produce a summation result, said determiner including a decoder coupled to said combiner for decoding the summation result.

28. A method of communicating a desired bit sequence over a wireless communication link, comprising:

including the desired bit sequence in each of a plurality of transmissions over the wireless communication link;

producing in response to each of the plurality of transmissions a received bit sequence corresponding to the desired bit sequence;

applying a majority logic operation to the received bit sequences; and

making a determination that a result of the majority logic operation is the desired bit sequence.

29. A wireless communication apparatus, comprising:

an input for receiving a plurality of received bit sequences respectively produced in response to a plurality of transmissions received via a wireless communication link, each of said received bit sequences corresponding to a desired bit sequence included in each of said plurality of transmissions; and

a determiner coupled to said input for applying a majority logic operation to the received bit sequences and making a determination that a result of the majority logic operation is the desired bit sequence.

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